

### **Amendments to the Specification**

Please replace the paragraph immediately following the "Summary of the Invention" heading on page 4 of the specification with the following amended paragraph:

Against this background, ~~and from a first aspect, the present invention resides in claim 1. A method according to claim 19 is also disclosed.~~ an embodiment of the invention provides a method of compressing mass spectrometry data. The method includes reading data corresponding to a spectrum, and conducting a statistical analysis of the noise within the data to derive one or more statistical moments or parameters characterizing noise distribution. A threshold value is calculated based on the derived statistical moment(s)/parameters(s), and peaks are identified in the spectrum by applying the threshold value to the spectrum data. Information representative of the identified peaks and statistical moment(s)/parameter(s) are stored for subsequent retrieval and processing.

Please add the following new paragraph immediately after the foregoing amended paragraph:

According to another embodiment of the invention, a method for compressing mass spectrometric data on a block-wise basis includes steps of reading data corresponding to a spectrum and dividing the data into a plurality of data blocks. For each block, a statistical analysis is performed on the noise of the data within that block to derive one or more statistical moments or parameters, which are then used to determine a threshold value for the noise within the block. Peaks within the block are identified by applying the threshold to the spectrum data, and information representative of the identified peaks and the derived statistical moment(s)/parameter(s) associated with the block are stored.